

WRITTEN TESTIMONY ON AN ACT CONCERNING MUNICIPAL AUTOMATED  
TRAFFIC ENFORCEMENT SAFETY DEVICES AT CERTAIN INTERSECTIONS  
House Bill No. 5458

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Good day Senator Maynard, Representative Guerrera and distinguished members of the Transportation Committee. My name is John Large. I have my doctorate in public health with degrees in engineering from the Georgia Institute of Technology. I am on the faculty in the College of Public Health at the University of South Florida in Tampa. I and my co-authors and colleagues are formally trained in research to evaluate public health population-based interventions. Collectively, we have about 50-years of experience in conducting public health research. I am here to testify about House Bill No. 5458, An Act Concerning Municipal Automated Traffic Enforcement Safety Devices at Certain Intersections.

It is my sincerest honor and pleasure to be afforded the opportunity to share our research findings before you on this important issue that has an immediate impact on the safety and health of the public at large. With my two colleagues, we have published four analyses of red light camera research studies. We have not received any external funding; our efforts thus far have been funded as part of our university research assignment.

My colleagues began their interest in red-light cameras in 2005 when Florida legislation proposed making red light cameras legal with the fines being used to subsidize trauma center hospitals. My colleagues were conducting research with Florida trauma surgeons who were seeking sources of State funding for trauma centers.

Instead of endorsing the legislation, Florida trauma surgeons took no position on the bill due to the Office of House Majority Leader's report (2001) that cameras were associated with large increases in rear-end crashes. This increase occurs because cameras encourage abrupt stopping, which is associated with rear-end crashes, and is the driving behavior used to stage accidents. One of our publications explains why rear-end crashes can occur even when correct following distances are used.

Today I wish to address one of the many fundamental issues regarding red light cameras and that is that sound scientific research consistently concludes that these cameras are associated with significant increases in crashes and injuries. On the other hand, the research studies that presume to report safety benefits from the use of cameras violate basic research methods and tend to be associated with vested interests.

Our original research was an analysis of existing works and studies. We began our analysis based on the National Highway Traffic Safety Administration's (NHTSA) identification of the best research designs from 75 RLC studies reviewed. We also included a published study by a long-time supporter of RLCs and an IIHS representative. Since our first publication we have examined other studies and reports, with the most recent being the 2011 IIHS-sponsored paper touting the safety benefits of RLCs.

As a result of our analysis of the existing research on the topic of the potential public health benefits of red-light cameras, our main conclusion is that the studies that tend to find that a safety benefit exists have serious scientific and statistical flaws. However, those studies that found that the safety benefits to the public are dubious, or worse, tended to have employed more robust methods and greater statistical rigor.

Some of the more egregious deficiencies seen in studies supporting the use of RLCs in promoting public safety include:

- Not having valid or reasonable comparison intersection groups either because they combined data from intersections with both RLCs and not, rather than examining them separately; or by comparing signalized intersections using red-light cameras against those intersections without any electronic traffic signals. Non-signalized intersections, by definition, cannot have any red-light running infractions, so when using them as a comparison group, it is impossible for them to show any *decrease* in infractions;
- The studies in support of RLCs typically use summary statistics to incorrectly attribute the long-term time trend of annual decreases in red-light running incidents to RLCs;
- RLC-promoting articles often display incorrect applications of statistical models and lack the use of recognized necessary variables. For example, the 2011 IIHS study used a technique for count data when their measures were clearly continuous. Additionally, the study neither employed variables that were identified in previous research as being relevant or significant for traffic studies nor were the variables that were included incorporated correctly and without redundancy;
- A typical practice by the studies finding in support of the use of RLCs is the incorrect reporting of their statistical findings, such as their own model results being inappropriately calculated or, more deplorably, disguising the lack of statistical significance of their findings by not including such relevant measures as confidence intervals;

- Economic analyses on the use of cameras have excluded important outcomes, such as the cost of fatal crashes, which occur in higher rates at camera sites. In one study conducted for the Federal Highway Administration, the authors admitted omitting the cost of fatalities by rationalizing that “small numbers of fatalities should not be allowed to affect decisions on roadway-based treatments such as RLCs.” The authors further explained that they excluded the cost of fatal crashes because the cost of a single fatal crash “could significantly bias the results.” Thus, the minor positive economic savings that some studies have been reported is achieved, in part, by excluding the high costs of fatal crashes.

The bottom line of our analysis is that the public is being made to consider a fallacy of a false choice. We are not faced with using RLCs to increase traffic safety with doing nothing at all. Quite the contrary is true. For the last half of the twentieth century, when great strides in public health and traffic safety outcomes had been achieved, traffic engineers had been using sound and proven improvement techniques. Indeed, one of the largest proponents of traffic safety, the American Automobile Association, recommends several steps for addressing safety issues at traffic intersections.

- When a municipality is faced with a signalized intersection with potentially avoidable red-light running deaths and injuries, sound engineering analyses should be conducted to ascertain whether a problem exists and to what extent;
- Once a red-light running problem has been determined through an evidence-based approach, then engineering analyses should be undertaken to determine root causes. Specific solutions exist to address many of the typical causes of red-light running. For example, improving roadway visibility, not allowing street-side parking, providing back plating on lights to block the rising and setting of the sun, and, most importantly, setting the yellow-light timings to adequately allow time for all vehicles to safely brake and to provide for an all-red interval in all directions to allow for the safe clearing of the intersection. As explained in the House Majority Leader's report, a systematic effort has been ongoing in the U.S. to permit short yellow light timings that guarantee camera program profitability at the expense, both monetarily and in safety, to the driving public;
- If red-light running remains a problem after all reasonable improvements have been made to assist drivers in safely navigating an intersection, then it may be logical to consider deploying cameras.

However, if there is insufficient ticket volume at an intersection, both camera companies and municipalities will not find the investment profitable. The public, however, will be the clear winners by having safer roads and driving conditions.